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Congenital Cardiology Solutions

HEART RATE RECOVERY PREDICTS CLINICAL WORSENING IN PATIENTS WITH CONGENITAL HEART DISEASE ASSOCIATED PULMONARY ARTERIAL HYPERTENSION

Poster Contributions
Poster Sessions, Expo North
Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Congenital Cardiology Solutions: Outcomes and Resource Utilization in the Adults
Abstract Category: 12. Congenital Cardiology Solutions: Adult
Presentation Number: 1290-115

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Background: Slow heart rate recovery (HRR) after exercise has been shown to be a predictor of mortality in patients with chronic cardio-pulmonary diseases. The ability of HRR to predict clinical worsening in congenital heart disease associated pulmonary arterial hypertension (PAH) remains unexplored. Our aim was to identify the association of HRR at 1 minute (HRR1) after a 6-minute walk (6MW) test with clinical worsening in patients with congenital heart disease associated PAH.

Methods: All adult patients (N=50) with congenital heart disease associated PAH seen at our institute between August 2009 to September 2011 were included. HRR1 was defined as difference in heart rate between the end of 6MW test and after 1 minute of completion of 6MW test. Clinical worsening was defined as any escalation of drug therapy for PAH, PAH related hospital admission or death. Patients with HRR1 <25/min (N=15)were compared with those who had a HRR1 >25/min (N=35).

Results: Patient groups were comparable in baseline characteristics and hemodynamic variables. Patients with HRR1 <25/min were more likely to have clinical worsening events as compared to patients with HRR1 >25/min [Odds Ratio 7.8; 95% CI (2-59); p <0.01]. HRR1<25 was associated with shorter time to clinical worsening (TCW) [13 months as compared to 8 months; p <0.01]. Patients with HRR1 <25 also had a significantly lower 6 minute walk distance than the patients with HRR1>25 (1064 feet versus 1449 feet; p <0.01).

Conclusions: HRR1 after the 6MW test is a strong and independent predictor of prognosis in patients with congenital heart disease associated PAH. HRR is a simple tool that can help predict clinical worsening and time to first clinical worsening event in patients with congenital heart disease associated PAH.